UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,617	01/10/2006	Christopher Beaugeant	2002P20605	4992

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LERNER GREENBERG STEMER LLP
P O BOX 2480
HOLLYWOOD, FL 33022-2480

EXAMINER
CAI, WAYNE HUU

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 June 2005*.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-10* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *17 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All   b)☐ Some * c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Drawings

2.   The drawings were received on June 17, 2005. These drawings are acceptable.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Chang et al. (hereinafter "Chang", US 2003/0133565) in view of Dellien et al.

(hereinafter "Dellien", US 2002/0016161).

Regarding claims 1 and 10, Chang teaches or suggests a method for

suppression (10) of echo (z(t)) in uplink data (y(t) 1216) coming from a terminal (2,3),

with the original or a copy of the downlink data (12-16) (far-end speech from a speaker

121) and uplink data (19-21) (the echo is combined with near-end speech being

analyzed to prepare for echo suppression (10) (the echo and near-end speech is

combined to form the input to microphone 128), and with uplink data (19-21) being

modified for echo reduction (10) using the results of the analysis (9) of the downlink

data (12-16) and of the uplink data (19-21) (i.e., the digital input S(n), which is the

combination of near-end speech and echo, and the downlink signal is fed into the

Adaptive Filter 124). Also, see paragraph 0005, fig. 1 & 5 and its descriptions.

Chang, however, does not expressly teach or suggest the uplink data is in

compressed state.

In a similar endeavor, Dellien teaches or suggests method and apparatus for

compression of speech encoded parameters. Dellien also teaches or suggest the

uplink data is in compressed state (title, abstract and paragraph 0207).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to combine these references together.

The motivation/suggestion for doing so would have been to improve the

throughput data rate.

Regarding claim 2, Chang and Dellien teach and suggest all limitations recited

within claims as described above. Chang also teaches or suggests that the non-

transcoded state represents the compressed encoding in which the uplink data was

transmitted compressed over a mobile radio network (fig. 1 and its descriptions and

paragraph 0207).

Regarding claim 3, Chang and Dellien teach and suggest all limitations recited

within claims as described above. Chang also teaches or suggests that, before the

analysis (9), the downlink data (12-16) and the uplink data (19-21) is decoded (18)

partly or entirely from the transcoded state into a format representing the timing

sequence of the signals representing the data (e.g. TDM) (fig. 1 & 5 and its descriptions.

encoding/decoding process including ADC and DAC process).

Regarding claim 4, Chang and Dellien teach and suggest all limitations recited

within claims as described above. Chang also teaches or suggests that a copy is made

(17a, 17b) of at least downlink data (12-16) to be sent in the direction of the terminal or

the original of the downlink data is sent to the terminal, while the other downlink-data

(original or copy) is used for encoding (18) and analysis (9) to make possible echo

reduction (10) in the uplink data, with only either copy or original of the downlink data

being decoded (i.e., both the far-end speech, and the near-end speech in combination

with the echo is fed into the adaptive filter 124. Also, the far-end speech is decoded by

the voice decoder 123).

Regarding claim 5, Chang and Dellien teach and suggest all limitations recited

within claims as described above. Chang also teaches or suggests that the downlink

data and the uplink data will be copied before the analysis (i.e., the echo and the near-

end speech is combined and forwarded to the summer 126).

Regarding claim 6, Chang and Dellien teach and suggest all limitations recited

within claims as described above. Chang also teaches or suggests during echo

suppression (10) general knowledge of relationships between downlink data and

required changes in uplink data is also taken into consideration for echo reduction on

the uplink data using the results of the analysis (9) of the downlink data (the comparison

between the uplink and downlink is made. See figures 1 & 5).

Regarding claim 7, Chang and Dellien teach and suggest all limitations recited within claims as described above. Chang also teaches or suggests that the terminal (2, 3) is a mobile radio terminal (fig. 3, smart phone 201).

Regarding claim 8, Chang and Dellien teach and suggest all limitations recited within claims as described above. Chang also teaches or suggests that the terminal is a mobile radio terminal for a cellular mobile radio network (fig. 3 illustrates the communication between smart phone 201 and cellular network 202).

Regarding claim 9, Chang and Dellien teach and suggest all limitations recited within claims as described above. Even though the combination of Chang and Dellien do not expressly teach or suggest hat the propagation delay caused by the partial decoding of the uplink stream is less than it would be with a complete decoding of the uplink stream, subsequent echo suppression and subsequent re-encoding. However, it is obvious and/or well known in the art that when the process of encoding and/or decoding is taking place, it takes some time this get this process done. Therefore, by partially decode the stream of data rather than fully or completely decode the stream of data. Clearly, that would reduce the amount of time to process the information. Thus, the propagation delay is also reduced.

The motivation/suggestion for doing so would have been to increase the throughput data rate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WAYNE CAI whose telephone number is (571)272-7798. The examiner can normally be reached on Monday-Thursday from 8:00 a.m. to 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wayne Cai/
Examiner, Art Unit 2617

/Lester Kincaid/

Supervisory Patent Examiner, Art Unit 2617